



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

TRANSACTIONS  
OF THE  
AMERICAN  
PHILOSOPHICAL SOCIETY,  
HELD AT  
PHILADELPHIA,  
FOR PROMOTING  
*USEFUL KNOWLEDGE.*  
VOLUME V.

---

*Reprinted with the permission of the  
American Philosophical Society*

KRAUS REPRINT CORPORATION  
New York  
1966

**Printed in U.S.A.**

TRANSACTIONS  
OF THE  
AMERICAN  
PHILOSOPHICAL SOCIETY,  
HELD AT  
PHILADELPHIA,  
FOR PROMOTING  
*USEFUL KNOWLEDGE.*  
VOLUME V.

---

P H I L A D E L P H I A :

PRINTED BY BUDD & BARTRAM

For THOMAS DOBSON, AT THE STONE-HOUSE,  
Nº 41, SOUTH SECOND-STREET.

---

1802.

## ADVERTISEMENT.

THE following are the rules adopted for the government of committees in the choice of papers for publication.

FIRST, “ That the grounds of the Committee’s choice of papers for the press, should always be the importance or singularity of the subjects, or the advantageous manner of treating them, without pretending to answer, or to make the society answerable, for the certainty of the facts, or propriety of the reasonings, contained in the several papers so published, which must still rest on the credit or judgment of their respective authors.

SECONDLY, “ That neither the Society, nor the Committee of the press, do ever give their opinion as a body, upon any paper they may publish, or upon any subject of Art or Nature that comes before them.”

*At a stated meeting of the Society, held at their Hall, December 19th, 1800, the following Premiums were proposed :*

I.

For the most simple, convenient, and effectual method of ventilating a ship at sea, without manual labour; if superior to any now in use, a premium of *one hundred dollars*.

Memoirs to be delivered by the first of April, 1802.

II.

For the cheapest and most effectual method of rendering common oil fit to be burned in the Argand lamp, either by purifying the oil, or by an improvement in the lamp: a premium of *thirty-five dollars*.

Memoirs to be delivered by the first of April, 1802.

III.

For any simple and effectual method of rendering turpentine, or any other cheap inflammable substance, a fit fuel for street or house lamps, or a proper material for candles: a premium of *forty dollars*.

Memoirs to be delivered by the first of April, 1802.

IV.

For the best experimental essay on the native red dyes of the United States, accompanied with small specimens of the dyed stuffs: a premium of *one hundred and fifty dollars*.

Memoirs to be delivered by the first of January, 1804.

*General Conditions for the above Premiums :*

1. Every candidate, along with his performance, is to send to the society a sealed letter, containing his name and  
place

place of abode ; which letter shall never be opened by the society, except in the case of a successful candidate.

2. No performance, invention or improvement, on any of the subjects proposed, for which a patent or any other reward shall have been obtained, before presenting it to the society, shall be considered as entitled to the premium.

3. In lieu of the money which shall be awarded by the society, as a premium, any successful candidate shall have it in his option to receive a gold or silver medal, or piece of plate, with a suitable inscription of equal value.

4. The society reserve to themselves the power of giving, in all cases, such part only of any premium proposed, as the performance shall be adjudged to deserve ; or of withholding the whole, if it shall appear to have no merit above what may have been already published on the subject. The candidates may, however, be assured, that the society will always judge liberally of their several claims.

---

### MR. I. H. DE MAGELLAN, OF LONDON,

Having made a donation, to the society, of *two hundred guineas*, to be vested in a permanent fund ; that the interest arising therefrom may be disposed of, in annual premiums, to the authors of the best discoveries or most useful improvements, relating to Navigation, or to Natural Philosophy, mere Natural History only excepted ;—the following are the rules and conditions, adopted by the society, for the disposition of the proposed premiums, in conformity to the intention of the Donor, viz.

I. The candidate shall send his discovery, invention or improvement, addressed to the President or one of the Vice-Presidents of the society, free of postage or other charges ; and shall distinguish his performance by some motto,

motto, device or other signature, at his pleasure. Together with his discovery, invention or improvement, he shall also send a sealed letter, containing the same motto, device or signature, and subscribed with the real name and place of residence of the author.

II. Persons of any nation, sect, or denomination whatever, shall be admitted as candidates for this premium.

III. No discovery, invention or improvement shall be entitled to this premium, which hath been already published, or for which the author hath been publicly rewarded elsewhere.

IV. The candidate shall communicate his discovery, invention or improvement, either in the English, French, German, or Latin language.

V. All such communications shall be publicly read or exhibited to the society, at some stated meeting, not less than one month previous to the day of adjudication; and shall at all times be open to the inspection of such members as shall desire it. But no member shall carry home with him the communication, description or model, except the officer to whom it shall be entrusted: nor shall such officer part with the same out of his custody, without a special order of the society for that purpose.

VI. The society having previously referred the several communications, from candidates for the premium then depending, to the consideration of the twelve counsellors and other officers of the Society, and having received their report thereon, shall, at one of their stated meetings, in the month of December, annually, after the expiration of this current year (of the time and place, together with the particular occasion of which meeting, due notice shall be previously given, by public advertisement) proceed to the final adjudication of the said premium: and after due consideration had, a vote shall first be taken on this question, viz. "Whether any of the communications,



cations, then under inspection, be worthy of the proposed premium?" If this question be determined in the *negative*, the whole business shall be deferred till another year: But if in the *affirmative*, the Society shall proceed to determine, by ballot, given by the members at large, the discovery, invention or improvement most useful and worthy. And that discovery, invention or improvement, which shall be found to have a majority of concurring votes in its favour, shall be successful. And then, *and not till then*, the sealed letter accompanying the crowned performance, shall be opened, and the name of the author announced as the person entitled to the said premium.

VII. No member of the Society who is a candidate for the premium then depending, or who hath not previously declared to the Society, either by word or writing, that he has considered and weighed, according to the best of his judgment, the comparative merits of the several claims then under consideration, shall sit in judgment, or give his vote, in awarding the said premium.

VIII. A full account of the crowned subject shall be published by the Society as soon as may be, after the adjudication, either in a separate publication, or in the next succeeding volume of their Transactions, or in both.

IX. The unsuccessful performances shall remain under consideration, and their authors be considered as candidates for the premium, for *five* years next succeeding the time of their presentment; except such performances as their authors may, in the mean time, think fit to withdraw: And the Society shall annually publish an abstract of the titles, object or subject matter of the communications so under consideration, such only excepted as the Society shall think not worthy of public notice.

X. The letters containing the names of authors whose performances shall be rejected, or which shall be found unsuccessful after a trial of five years, shall be burnt before the Society without breaking the seals.

XI.

XI. In case there should be a failure, in any year, of any communication worthy of the proposed premium, there will then be two premiums to be awarded in the next year. But no accumulation of premiums shall entitle an author to more than one premium for any one discovery, invention or improvement.

XII. The premium shall consist of an oval plate of solid standard gold, of the value of *Ten Guineas*. On one side thereof shall be neatly engraved a short Latin motto suited to the occasion—together with these words, *The premium of I. H. De Magellan, of London, established in the year 1786*. And on the other side of the plate shall be engraved these words, *Awarded by the A. P. S. to——— for his discovery of —— A. D.—— President*. And the seal of the Society shall be annexed to the said golden plate, by a ribbon passing through a small hole near the lower edge thereof.

*The*

*The Society having appointed a Committee to collect information respecting the past and present state of this country, the Committee during the last year addressed the following letter to such persons as were likely, in their opinion, to advance the object of the Society.*

## [C I R C U L A R.]

PHILOSOPHICAL HALL, PHILADELPHIA.

SIR,

THE American Philosophical Society have always considered the antiquity, changes, and present state of their own country as primary objects of their research; and with a view to facilitate such discoveries, a permanent committee has been established, among whose duties the following have been recommended as requiring particular attention.

1. To procure one or more entire skeletons of the Mammoth, so called, and of such other unknown animals as either have been, or hereafter may be discovered in America.

2. To obtain accurate plans, drawings and descriptions of whatever is interesting, (where the originals cannot be had) and especially of ancient Fortifications, Tumuli, and other Indian works of art: ascertaining the materials composing them, their contents, the purposes for which they were probably designed, &c.

3. To invite researches into the Natural History of the Earth, the changes it has undergone as to Mountains, Lakes, Rivers, Prairies, &c.

VOL. V.

b

4. To

4. To inquire into the Customs, Manners, Languages and Character of the Indian nations, ancient and modern, and their migrations.

The importance of these objects will be acknowledged by every Lover of Science, and, we trust, sufficiently apologize for thus troubling you : for without the aid of gentlemen who have taste and opportunity for such researches, our means would be very confined. We therefore solicit your communications, now or in future, on these subjects ; which will be at all times thankfully received, and duly noticed in the publications of the Society.

As to the first object, the committee suggest to Gentlemen who may be in the way of inquiries of that kind, that the Great Bone Lick on the Ohio, and other places where there may be mineral salt, are the most eligible spots for the purpose ; because animals are known to resort to such places.

With respect to the second head, the committee are desirous that cuts in various directions may be made into many of the Tumuli, to ascertain their contents ; while the diameter of the largest tree growing thereon, the number of its annulars and the species of the tree, may tend to give some idea of their antiquity. If the works should be found to be of Masonry ; the length, breadth, and height of the walls ought to be carefully measured, the form and nature of the stones described, and specimens of both the cement and stones sent to the committee.

The best methods of obtaining information on the other subjects will naturally suggest themselves to you ; and we rely on a disposition favourable to our wishes.

The

The Committee consist of the following Gentlemen, viz.

THOMAS JEFFERSON, President of the American  
Philosophical Society, at Monticello in Virginia.

JAMES WILKINSON, Commander of the Army at  
Head Quarters.

Dr. CASPAR WISTAR, Vice President	} in Philadel.
of the A. P. S.	
Dr. ADAM SEYBERT, Secretary of do.	
C. W. PEALE, and	
JON. WILLIAMS.	

Your communications may be addressed to any one of the Committee, but the articles you may think proper to furnish should be sent to this place.

In behalf of the Committee,

I am respectfully,

Sir, your obedient servant,

\_\_\_\_\_ Chairman.

To \_\_\_\_\_

LIST OF THE OFFICERS  
OF THE  
*AMERICAN PHILOSOPHICAL SOCIETY,*

For the Year 1801.

PATRON. Thomas M'Kean, Esquire, Governor of the  
Commonwealth of Pennsylvania.

PRESIDENT. Thomas Jefferfon, Esquire.

VICE-PRESIDENTS. { Caspar Wistar,  
Robert Patterfon,  
Andrew Ellicott.

SECRETARIES. { John Redman Coxe,  
Adam Seybert,  
Joseph Clay,  
Burgifs Allifon.

COUNSELLORS for { Jonathan B. Smith,  
three Years. { William Currie,  
Samuel Wheeler,  
Peter Stephen Duponceau.

CURATORS. { Charles Wilfon Peale,  
Robert Leslie,  
John R. Smith.

TREASURER. John Vaughan.

LIST

LIST of the MEMBERS of the AMERICAN PHILOSOPHICAL SOCIETY, elected since January 1799.

AMERICAN MEMBERS.

WILLIAM BOYS, A. M. Philadelphia.  
John Redman Coxe, M. D. do.  
Thomas Peters Smith, do.  
Joseph Clay, do.  
B. Henry Latrobe, Engineer, do.  
William Maclure, do.  
Samuel Elam, Newport, R. I.  
John R. Smith, Philadelphia.  
Justus Erick Bollman, do.  
W. Dunbar, of the Mississippi Territory.  
Samuel Brown, Kentucky.  
Samuel Miller, A. M. New-York.  
Robert R. Livingston, do.  
Thomas T. Hewson, Philadelphia.

FOREIGN MEMBERS.

Robert Liston, Esq. his Britannic Majesty's Envoy Extraordinary and Minister Plenipotentiary, near the United States.  
M. Dupont de Nemours, late of France, now residing in the United States.  
Samuel Fhalberg, Physician to the Swedish Government at St. Bartholomews.  
Gustavus Paykul, of Sweden.  
Alexander Kemerez, first Secretary of the Junta at Guatimala.  
Francis Blanchet, of Quebec.  
William Jones, Mathematical Instrument maker, London.  
Don Joseph Joaquin de Ferrer, of Cadiz.  
Don Francisco Peyrolon, Secretary of the Real Sociedad de Amigos del País de Valencia.

PRESENTS

---

---

# C O N T E N T S

O F

## V O L U M E V.

No.	Page.
I. <i>EXPERIMENTS on the Transmission of Acids, and other Liquors, in the Form of Vapour, over several Substances in a hot earthen Tube.</i> By Dr. JOSEPH PRIESTLEY,	i
II. <i>Experiments relating to the change of Place in different kinds of Air through several interposing Substances.</i> By Dr. JOSEPH PRIESTLEY,	14
III. <i>Experiments relating to the Absorption of Air by Water.</i> By Dr. JOSEPH PRIESTLEY,	21
IV. <i>Miscellaneous Experiments relating to the Doctrine of Phlogiston.</i> By Dr. JOSEPH PRIESTLEY,	28
V. <i>Experiments on the Production of Air by the Freezing of Water.</i> By Dr. JOSEPH PRIESTLEY,	36
VI. <i>Experiments on Air exposed to Heat in metallic Tubes.</i> By Dr. JOSEPH PRIESTLEY,	42
VII. <i>Some Account of the Poisonous and Injurious Honey of North America.</i> By BENJAMIN SMITH BARTON, M. D.	51
VIII. <i>On the Ephoron Leukon, usually called the White Fly of Passaick River.</i> By Dr. WILLIAMSON,	71
	IX.



No.	Page.
IX. <i>Remarks on certain Articles found in an Indian Tumulus at Cincinnati, and now deposited in the Museum of the American Philosophical Society. By GEORGE TURNER,</i>	74
X. <i>A Drawing and Description of the Clupea Tyrannus and Oniscus Prægustator. By BENJAMIN HENRY LATROBE. F. A. P. S.</i>	77
XI. <i>A Description of a newly invented Globe Time-Piece. By the Rev. BURGISS ALLISON, A. M.</i>	82
XII. <i>A Description of the Pendant Planetarium. By BURGISS ALLISON,</i>	87
XIII. <i>On the Use of the Thermometer in Navigation. By WILLIAM STRICKLAND,</i>	90
XIV. <i>Sur les Végétaux, les Polypes et les Insectes. By DUPONT DE NEMOURS,</i>	104
XV. <i>Memoir on the Analysis of Black Vomit. By Dr. ISAAC CATHRALL,</i>	117
XVI. <i>Observations on the Soda, Magnesia, and Lime, contained in the Water of the Ocean; showing that they operate advantageously there by neutralizing Acids, and among others the Septic Acid, and that Sea-Water may be rendered fit for washing Clothes without the Aid of Soap. By SAMUEL L. MITCHILL, of New-York,</i>	139
XVII. <i>Description of a Stopper for the Openings by which the Sewers of Cities receive the Water of their Drains. By Mr. JOHN FRASER, of Chelsea, London,</i>	148
XVIII. <i>A Memoir on Animal Cotton, or the Insect Fly-Carrier. By M. BAUDRY DES LOZIERES, Member of several Academies, and Founder of the Society of Sciences and Arts, at Cape François,</i>	150
XIX. <i>Note concerning a Vegetable found under Ground. in a letter from COLONEL BELL,</i>	160
XX. <i>Astronomical, and Thermometrical Observations, made at the Confluence of the Mississippi, and Ohio Rivers. By ANDREW ELICOTT,</i>	162
	XXI.

No.	Page.
XXI. <i>Astronomical, and Thermometrical Observations, made on the Boundary between the United States and His Catholic Majesty.</i> By ANDREW ELLICOTT,	203
XXII. <i>Observations on the Figure of the Earth.</i> By JOSEPH CLAY, M. A. P. S.	312
XXIII. <i>Description of some Improvements in the common Fire-Place, accompanied with Models, offered to the consideration of the American Philosophical Society.</i> By C. W. PEALE, and his son RAPHAELLE,	320
APPENDIX. No. I. <i>An Account of a Method of Preventing the premature Decay of Peach Trees.</i> By JOHN ELLIS, of New-Jersey,	325
No. II. <i>Description of a Method of Cultivating Peach Trees, with a view to prevent their premature Decay; confirmed by the experience of Forty-five Years, in Delaware State and the western parts of Pennsylvania.</i> By THOMAS COULTER, Esq. of Bedford County, Pennsylvania.	327